

5.0 CORRIDOR OVERVIEW – SOUTH CORRIDOR

5.1 Land Use/Developed Areas

The South Corridor includes Morgan, Johnson and Shelby Counties. Principle transportation routes and developed areas are shown on Figure 5-1, Location Map. The South Corridor is currently served by State Route 44, an east-west connector linking Morgan, Johnson and Shelby Counties. There are few extended parallel routes within the corridor, and the ones that exist require travel over several connecting routes. SR 144, which links Franklin and Mooresville, utilizes a county road for part of the route (CR 144). It links with SR 44 to the east and SR 42 to the west to allow travel across the width of the South Corridor. SR 252 is a two-lane roadway south of SR 44 that links Edinburgh with Martinsville.

Although considered in overall travel forecasting, SR 252 and SR 42 are not reviewed in detail in this study. SR 252 is not fully reviewed due to its distance from CISTMS study corridors. SR 42 affects a very small portion of the South Corridor since it exists only west of Mooresville. (It does, however, link SR 144 with SR 39, one of the routes identified for detailed review within the West Corridor.)

Local roadway options for east-west travel are particularly limited in the South Corridor. Some are provided in Greenwood, but they do not link directly with the road system of Shelby County to the east, and none extend beyond SR 37 into Morgan County to the west. Johnson County is currently planning a new east-west arterial on the south side of Greenwood that will address part of this deficiency. Although the length of this road would be relatively short (all within Johnson County), it would have a positive effect on overall east-west travel since it would serve a highly developed area and would link with Fairland Road (CR 400N) in Shelby County (See Figure 5.1). The proposed East-West Corridor project is described in greater detail in a subsequent section of this chapter.

Most of the land use along these highways continues to be rural farmland. Exceptions are generally within the incorporated communities that are directly served. These include the cities of Martinsville, Mooresville, Franklin, and Shelbyville; and the towns of Waverly, Bargersville, Morgantown, Trafalgar, and Edinburgh.

5.2 Demographic Characteristics/Trends

Population – Between 1990 and 2000, Franklin had the most significant population growth of the communities in the South Corridor area at 51%. Shelbyville grew at a rate of 17% during this period and the population of Martinsville remained essentially the same. Significant growth was also experienced in Johnson County to the north of Franklin in Greenwood and White River Township.

Households – Studies have shown that households are a greater determinant of travel patterns than population. Household growth from 1990 to 2000 was similar to population growth in Franklin (53%) and Shelbyville (17%). Households in Martinsville grew by 5% during the period.

Housing Units – Housing unit growth is an indication that urbanization is occurring in areas that were previously undeveloped. The number of new housing units constructed grew by 59% in Franklin, 21% in Shelbyville, and 6% in Martinsville.

FIGURE 5-1
LOCATION MAP

See oversized figures file for Chapter 5

5.3 Existing Transportation System

As shown on Figure 5-1, SR 44 originates in Martinsville, passes through the communities of Franklin and Shelbyville, and continues eastward toward Rushville and Connersville. SR 144 originates in Mooresville and ends in Franklin. Although it forms a continuous roadway between these cities, the section between SR 37 near Waverly and SR 135 at Bargserville is not on the state highway system. This section is under Johnson County jurisdiction and is designated CR 144. SR 42 links with SR 144 in Mooresville and serves western Indiana. SR 252 exists only in Johnson and Morgan Counties. It links Edinburgh with Martinsville, and passes through Morgantown and Trafalgar.



The only four-lane sections of SR 44 are located at I-74 in Shelbyville and I-65 in Franklin (shown here).

As with other study corridors, transportation facilities in the South Corridor reflect a strong orientation toward Indianapolis. That is, the high capacity facilities are north-south, including I-65, I-74, US 31, SR 37 and SR 67. All are multi-lane roadways and several are designed at freeway or expressway standards. SR 135 (a two-lane highway) provides direct service between Indianapolis and Nashville. The area is also served by several north-south arterial roadways.

Traffic operations for the existing primary state routes within the South Corridor have been evaluated based on the procedures of the Highway Capacity Manual 2000 (HCM2000). Estimated travel speed and travel time (delay) are primary determinates of the quality of service. Most of the parameters required to successfully implement the HCM2000 analysis procedures were available from INDOT through the road inventory database, video log data compilation and traffic volume data from the periodic count program.

5.4 Overview of Parallel Arterials

East-west roadway capacity within the South Corridor is much more limited than that available for north-south travel. There is no multi-lane roadway serving “crosstown” traffic through the full length of the corridor. In fact, other than the state highways that cross the area, there is no roadway at all that provides a continuous route through all three counties of the South Corridor.

The three counties of the South Corridor vary in the character and mileage of local roadways provided. Shelby County is served by an extensive county road system. Generally, the network forms a grid pattern, although many routes are discontinuous and/or include jogs at crossroads. Morgan County’s roadway system is influenced by geographic constraints, variable terrain and the diagonal crossing of the county by White River. Local roadway options are limited. Most motorists traveling a significant distance utilize state highways for a least a portion of their trip.

East-west mobility in Johnson County varies by location. The northern third of the county is much more developed than the southern two thirds. This area, including Greenwood and unincorporated

portions of White River Township, is crossed by South County Line Road, CR 900N/CR 950N (Smith Valley Road/Main Street), CR 700N/CR 750N (Stones Crossing Road/Worthsville Road), and CR 500N (Whiteland Road). All are classified by Johnson County as arterials, and all but CR 750 have interchange linkages with I-65. (See next section, “Overview of State and Local Plans,” for the discussion of a proposed east-west corridor, including an interchange at CR 750.)

Travel needs in the central third of the county are served primarily by SR 44, SR 144 and SR 42, although CR 300S is continuous across most of the county south of Franklin. County roads provide several options for cross-county travel north of Franklin, near Whiteland and New Whiteland, but only CR 500N (Whiteland Road) is continuous. South of this roadway, the only east-west arterials are state highways. The southern third of the county relies almost exclusively on SR 252, which links Trafalgar with US 31.

Overall, the existing east-west roadways in the Southern Corridor offer few opportunities for serving longer distance travel. These opportunities should be provided for in the local roadway system as the area continues to develop. The proposed east-west corridor described in the next section would offer some relief to existing interchanges and parallel arterials in the northern third of Johnson County, an important consideration in this high growth area. Otherwise, the best opportunity for providing an improved east-west route is on CR 500N (Whiteland Road). Improvements to this road are not urgent since existing volumes are low and the corridor continues to be primarily rural. As with new local arterials in this area, the timing for future roadway investment should be driven by development rates.

5.5 Overview of State and Local Plans

Interviews were held with INDOT district staff as well as local planning and engineering officials for the purpose of identifying planned and/or programmed roadway improvements near or within the South Corridor. Future projects that will benefit east-west travel within the study area are as follows:

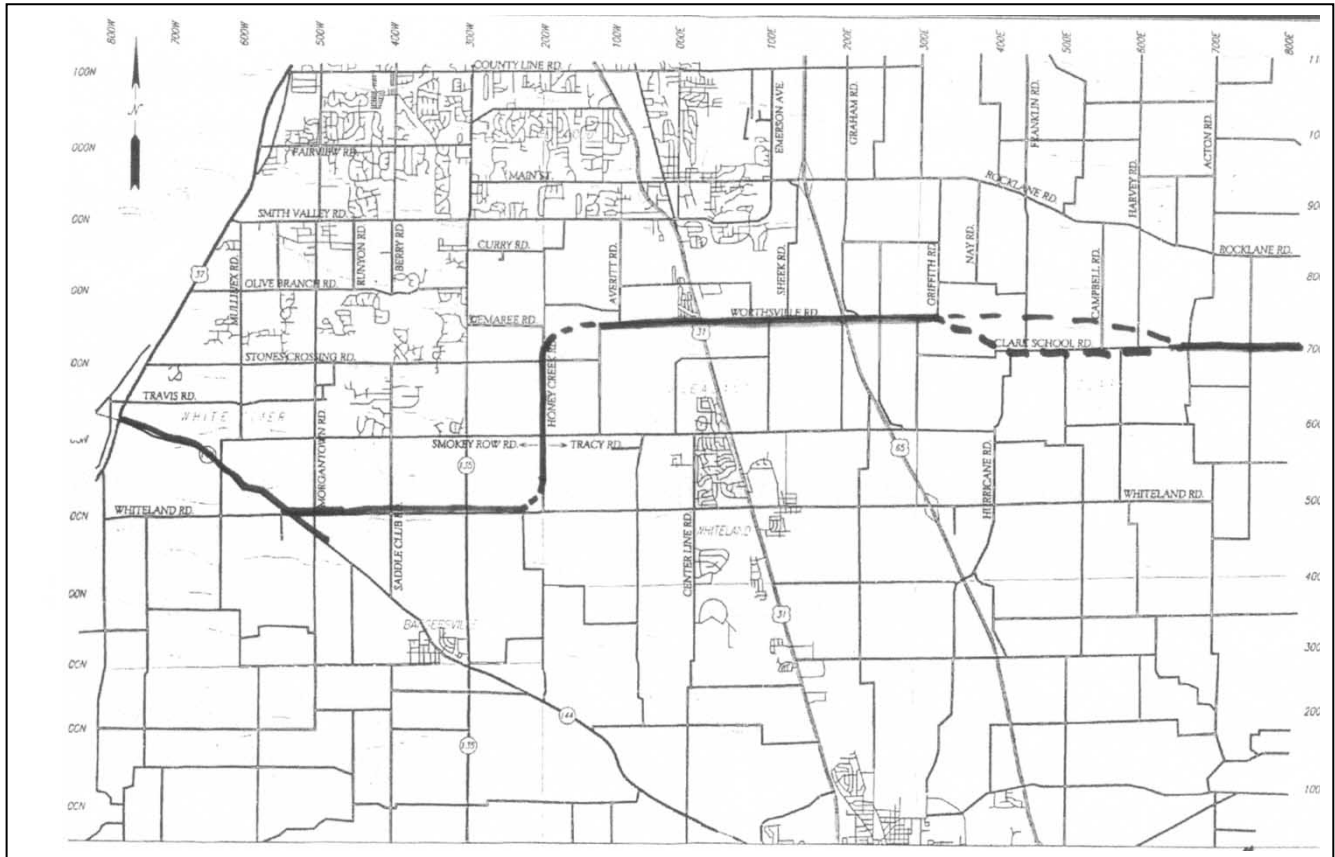
- East-West Corridor (Johnson County)

Improved east-west traffic flow has been a subject of discussion in northern Johnson County for many years. An “East West Corridor Task Force” was formed to study the issue in detail in 1999. Following a number of meetings and extensive public involvement activities, the Task Force developed a preferred alignment for presentation to the County Commissioners. The recommended location is shown on Figure 5-2. Comprised of CR 700N/CR 750N (Stones Crossing Road/Worthsville Road), the proposed East-West Corridor was incorporated into the Johnson County Comprehensive Plan as an arterial in April, 2003. Greenwood indicates the same route as a primary arterial in their plan. Both agencies foresee a future interchange of this road with I-65.

- CR 200N (City of Franklin)

In accordance with its 1994 plan, the City of Franklin is moving forward with the extension of CR 200N across US 31 near the new planned high school on the north side of the city. Although this route will not be of a length to serve South Corridor traffic outside the City of Franklin, it is significant since it reduces the virtual sole reliance on SR 44 to move east-west traffic across or through Franklin.

FIGURE 5-2
PROPOSED EAST-WEST CORRIDOR



Map prepared by: East-West Highway Task Force, 2002

- SR 44 Rehabilitation, Franklin to Shelbyville (INDOT)

INDOT is planning to upgrade SR 44 between Franklin and Shelbyville to provide a higher quality roadway while better meeting long term travel demand and providing improved service for trucks. (Local officials report that this link to I-74 for trucks has been a positive element of site selection for plants locating in industrial and technology parks near I-65 in Franklin.) In order to provide flexibility for meeting long term needs, this will be a high quality two-lane roadway, with 12-foot lanes and full (six- to eight-foot) berm shoulders with open drainage. Sufficient right of way will be acquired for future expansion to four lanes if necessary. Construction is programmed to start near the end of 2006.

INDOT has also programmed a number of smaller projects on SR 44, including the modernization of signs and traffic signals, and curve corrections (horizontal and vertical) at selected locations in Johnson and Shelby Counties.

- SR 144 “spot improvements”, Morgan County (INDOT)

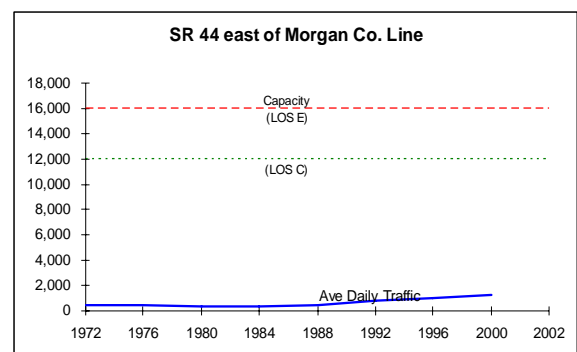
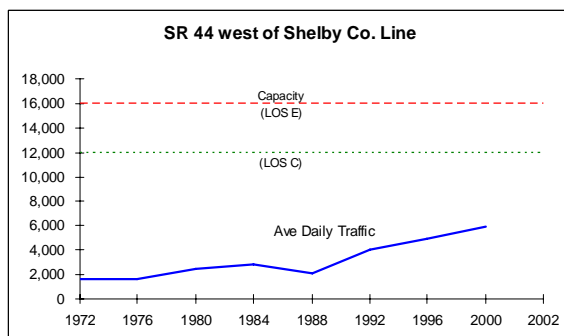
No major projects are currently planned for SR 144, but INDOT has programmed median construction and sign modernization for the east approach of SR 144 to SR 67 (2005), and an intersection improvement 3.2 miles east of SR 67 at Kitchen Road (2008).

- SR 42 pavement replacement, Morgan County (INDOT)

INDOT plans to replace the pavement on SR 42 from the western edge of Mooresville (0.44 miles west of SR 267) to SR 39 in Morgan County. The project is programmed to begin in 2007. This route serves as an extension of SR 144 west of Mooresville.

5.6 SR 44 Traffic Review

Average daily traffic volumes on SR 44 vary significantly through the study area. The western portion of the route, between Martinsville and Franklin, carries very low traffic volumes (about 2,000 vehicles per day). Traffic volumes increase when SR 44 joins SR 144 west of Franklin, peaking at about 16,000 vehicles per day in downtown Franklin.



Traffic volumes on SR 44 are generally higher between Franklin and Shelbyville (about 6,000 vehicles per day) and increase to approximately 25,000 vehicles per day in downtown Shelbyville. After remaining “flat” for a period of many years, this portion of SR 44 has experienced steady growth in volumes since about 1988.

5.7 Detailed Route Review – SR 44 (South Corridor)

Generally, SR 44 between Shelbyville and SR 135 is classified as a rural minor arterial. Between SR 135 and Martinsville, it is a rural major collector. Exceptions are in the Franklin and Shelbyville areas, where SR 44 is classified as an urban principal arterial because of its function to move significant volumes of traffic through these cities. The following sections review the existing physical features and factors related to traffic operations for State Route 44 in each county.

State Route 44 – Morgan County

SR 44 is a two-lane rural highway through Morgan County. Most land use abutting the roadway is classified as rural. Traffic volumes are not particularly high on this section of roadway, but the level of service is poor due to limited shoulder width, hilly terrain and a curvilinear alignment.



The curvy, hilly alignment of SR 44 limits capacity and contributes to a relatively high rate of accidents.

For purposes of review, SR 44 has been divided into two segments as shown on Figures 5-3 and 5-4. These sections are generally described as follows:

1. SR 37 to east of Martinsville (1.9 miles): two-lane, rural
2. East of Martinsville to east county line (6.6 miles): two-lane, rural

A summary of key traffic operational features for SR 44 in Morgan County is presented in Table 5A.

Table 5A: Key Operational Features

SR 44 – Morgan County Data	Segment		County Total
	1	2	
Length	1.9 mi	6.6 mi	8.5 mi
Two-Way Ave Daily Traffic (ADT)	3,000	2,000	2,100
Ave One-Way Peak Hour Volume	160	100	110
Typical Speed Limit	45 mph	40 mph	40 mph
Ave Operating Speed	30 mph	30 mph	30 mph
Ave Traffic Signals per Mile	0	0	0
Ave No Passing Zones per Mile	1.00	0.72	0.78
Ave Access Points per Mile	21	32	31
Ave Peak Hour Level of Service	E	D – E	D – E
Accidents per million vehicle miles	5.66*	4.48**	4.83

*Washington Twp

**Green Twp

Figure 5-3 presents the physical features by mile point for SR 44 through Morgan County. It is a two-lane rural roadway with one- to two-foot shoulders over virtually the full length. Geometrically, rural sections of the roadway are hilly with numerous curves, with the result that only 22% of the roadway is

Figure 5-3: Physical Features - SR 44, Morgan County

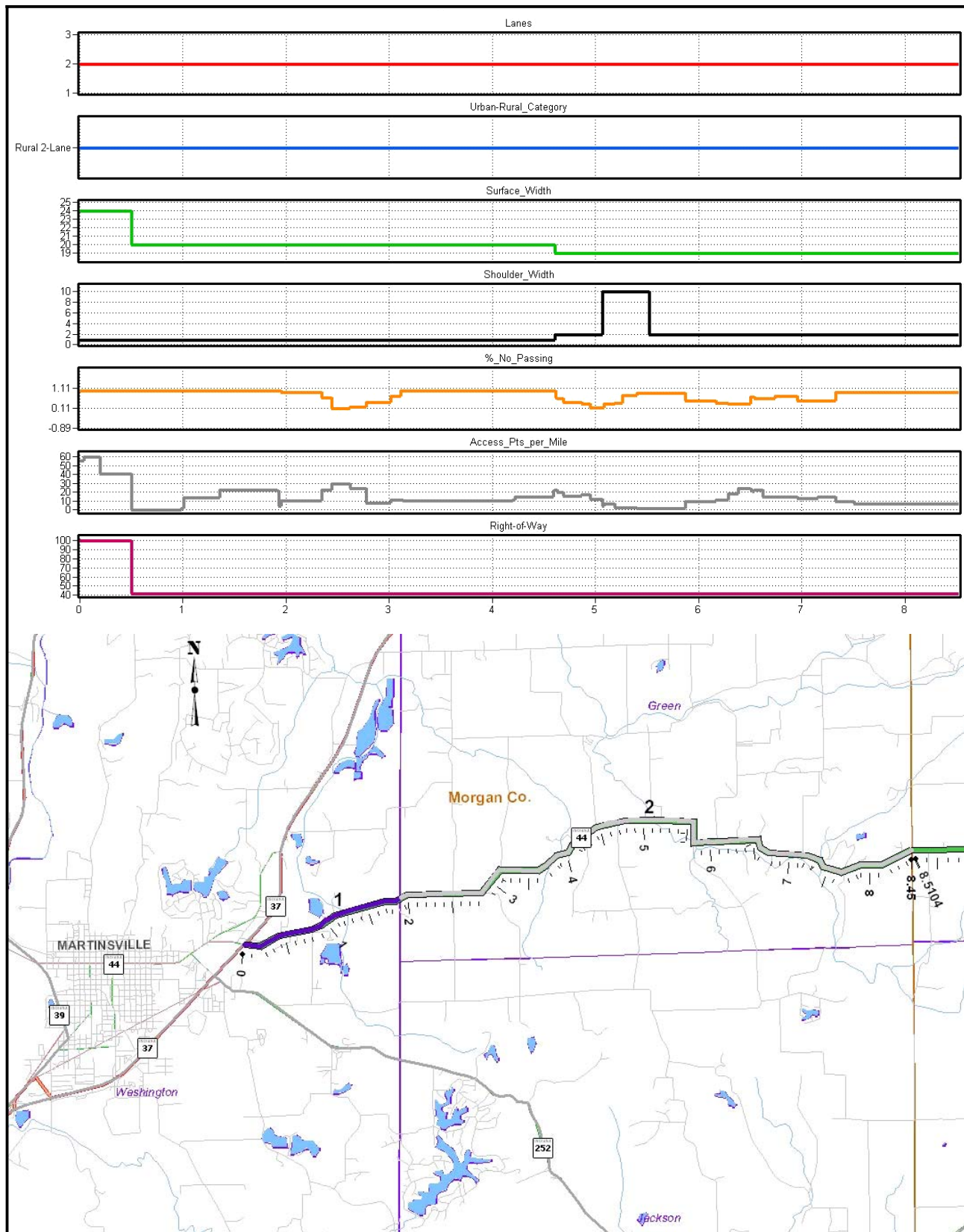
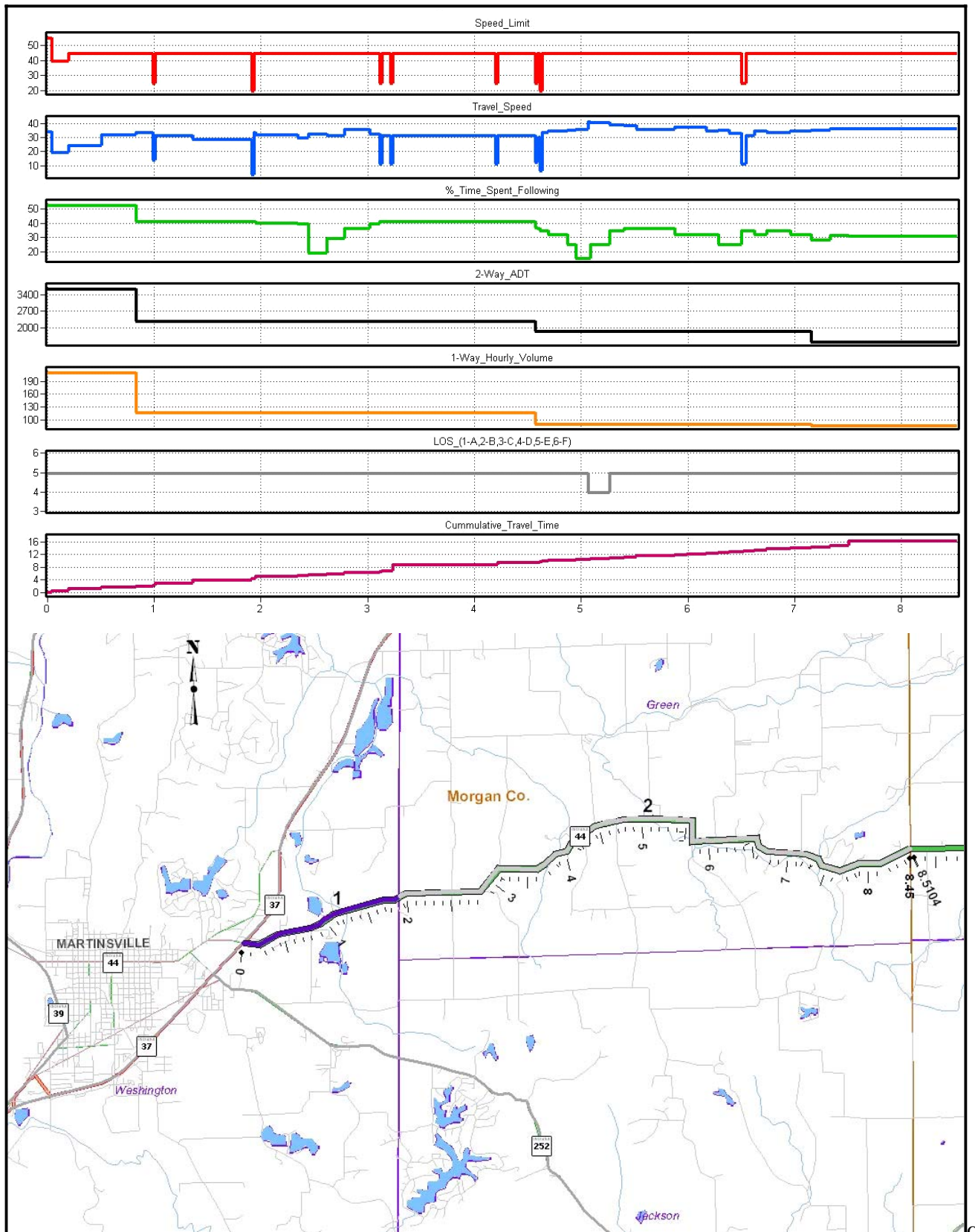


Figure 5-4: Traffic Operations - SR 44, Morgan County



available for passing. Due to minimal access control, there are multiple intersections and drives located over the full length of the roadway. Right-of-way is narrow (approximately 33 feet) for most of the route.

Data related to traffic operations on this section of SR 44 are illustrated by mile point on Figure 5-4. The posted speed limit is 45 mph at most locations. Daily traffic volumes are approximately 3,500 vehicles per day (vpd) near Martinsville, dropping to 2,000 vpd or less for the rest of the route. Reductions in travel speed occur all along the route due to the narrow pavement, hilly terrain and frequent curves. Peak hour traffic operations exhibit an average speed of 30 mph, with LOS E over most of the route due to the geometric characteristics of the roadway.



SR 44 is a rural two-lane highway with little or no shoulder area in Morgan County.

State Route 44 – Johnson County

SR 44 in Johnson County is a two-lane highway except for a section between I-65 and Franklin, where four lanes are provided. Most of the route is classified as rural within the county, with the only exception being the urban section in the City of Franklin. There is congestion in Franklin during peak periods due to relatively high traffic volumes, but the level of service on most roadway sections is a function of the terrain limitations rather than excessive vehicular demand.

SR 44 links with SR 144 on the west side of Franklin, as shown on Figure 5-5. SR 144 extends northwesterly to Mooresville, passing through Bargserville and ending at SR 67. (See detailed review of SR 144 presented in the next section.)

For purposes of review, SR 44 within Johnson County has been divided into four roadway segments with differing functional classification or number of lanes. These sections are generally described as follows:

1. West county line to Franklin (10.3 miles): two-lane, rural
2. City of Franklin (2.5 miles): two-lane, urban
3. Franklin to I-65 (1.5 miles): four-lane, urban
4. I-65 to east county line (0.5 miles): two-lane, rural

A summary of key traffic operational features for SR 44 within Johnson County is presented by roadway segment in Table 5B.



SR 44 has sharp curves and narrow shoulders through the western half of Johnson County.

FIGURE 5-5
SR 44 AND SR 144 AT FRANKLIN

See oversized figures file for Chapter 5

Table 5B: Key Operational Features

SR 44 – Johnson County	Segment				County Total
Data	1	2	3	4	
Length	10.3 mi	2.5 mi	1.5 mi	3.2 mi	17.5 mi
Two-Way Ave Daily Traffic (ADT)	3,700	11,400	13,100	6,000	6,700
Ave One-Way Peak Hour Volume	210	520	680	340	340
Typical Speed Limit	45 mph	30 mph	55 mph	55 mph	45 mph
Ave Operating Speed	35 mph	30 mph	30 mph	45 mph	35 mph
Ave Traffic Signals per Mile	0	2.42	0.65	0	0.40
Ave No Passing Zones per Mile	0.65	0.51	0.07	0.50	0.55
Ave Access Points per Mile	10	30	32	43	36
Ave Peak Hour Level of Service	D - E	B	B	C - D	C - D
Accidents per million vehicle miles	1.97*	2.38**	0.56***	0.56***	1.59

*Union Twp

**Franklin Twp

***Needham Twp



SR 44 is one of only a few continuous east-west routes through Franklin.

Physical features of SR 44 through Johnson County are described on Figure 5-6. SR 44 is a two-lane rural roadway, except within Franklin, where it is a city street with curb and gutter sections, and on the four-lane section on the east side of Franklin, where SR 44 approaches I-65. Shoulder widths on rural sections vary, but are only one to three feet at many locations. West of Franklin, the roadway is hilly with many curves. East of Franklin, the roadway passes through more level terrain, with only a few gentle curves as it approaches the Shelby County line.

Approximately 45% of the roadway is available for passing within Johnson County. There is minimal access control on SR 44, but the number of intersections and drives is limited by the terrain. Right-of-way is narrow (approximately 33 feet) over most of the route.

Data related to traffic operations on this section of SR 44 are illustrated by mile point on Figure 5-7. The posted speed limit is 55 mph near the east and west county lines, and is 45 mph for more than six miles west of Franklin. Daily traffic volumes vary from 1,000 to 6,000 vehicles per day (vpd) west of Franklin, and 5,000 to 6,000 vpd east of Franklin. Traffic volumes within Franklin are in the range of 10,000 vpd, peaking near I-65 at 13,100 vpd.

Reductions in travel speed occur primarily where speed limits are reduced through Franklin and where there are passing restrictions in the rural areas, particularly on the section west of Franklin. Existing traffic operations exhibit an average 35 mph speed. The level of service is E on the hilly sections west of Franklin, and is relatively good (D or better) on other sections.



SR 44 jogs one block on the east side for Franklin before joining the four-lane section near I-65.

Figure 5-6: Physical Features - SR 44, Johnson County

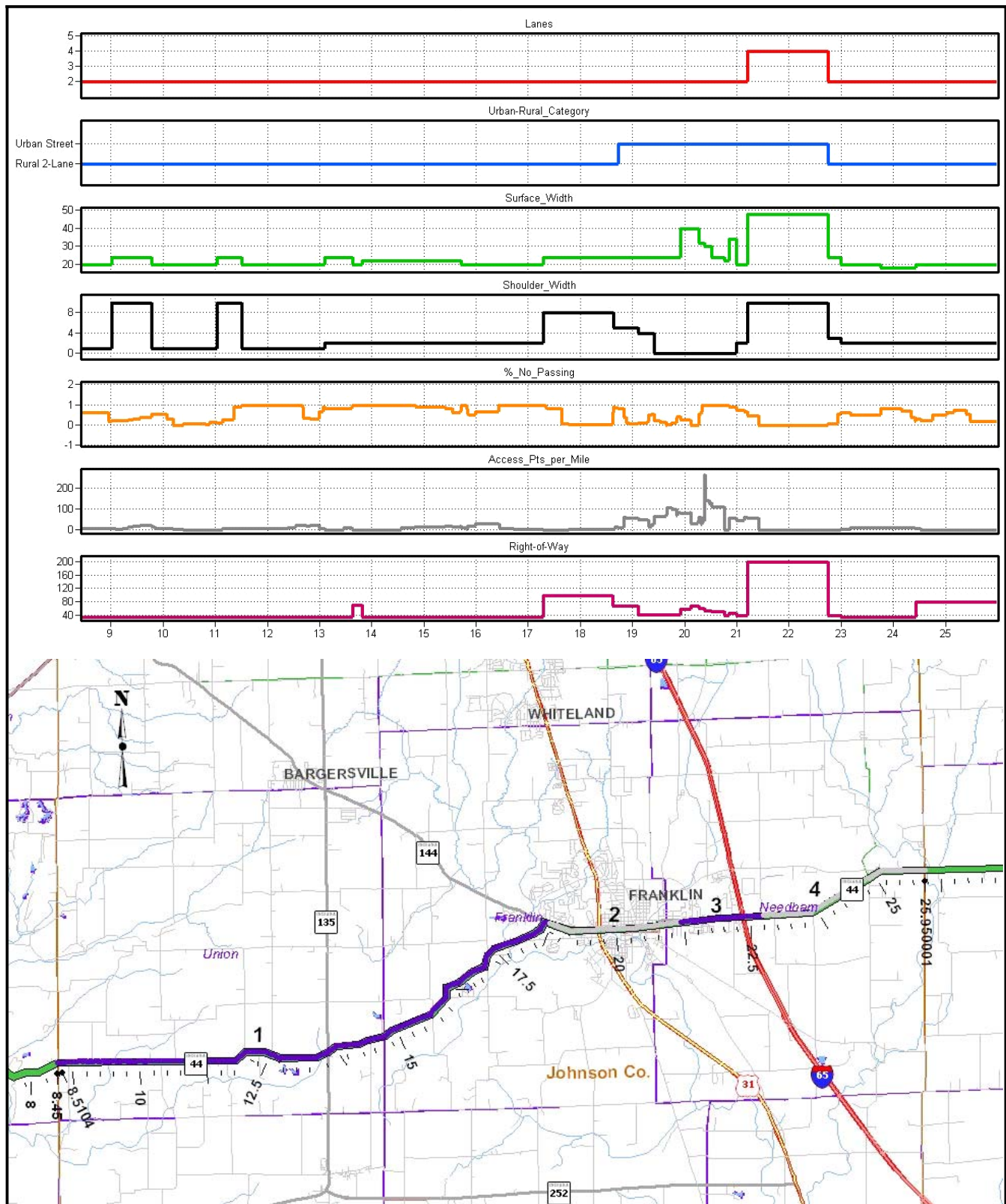
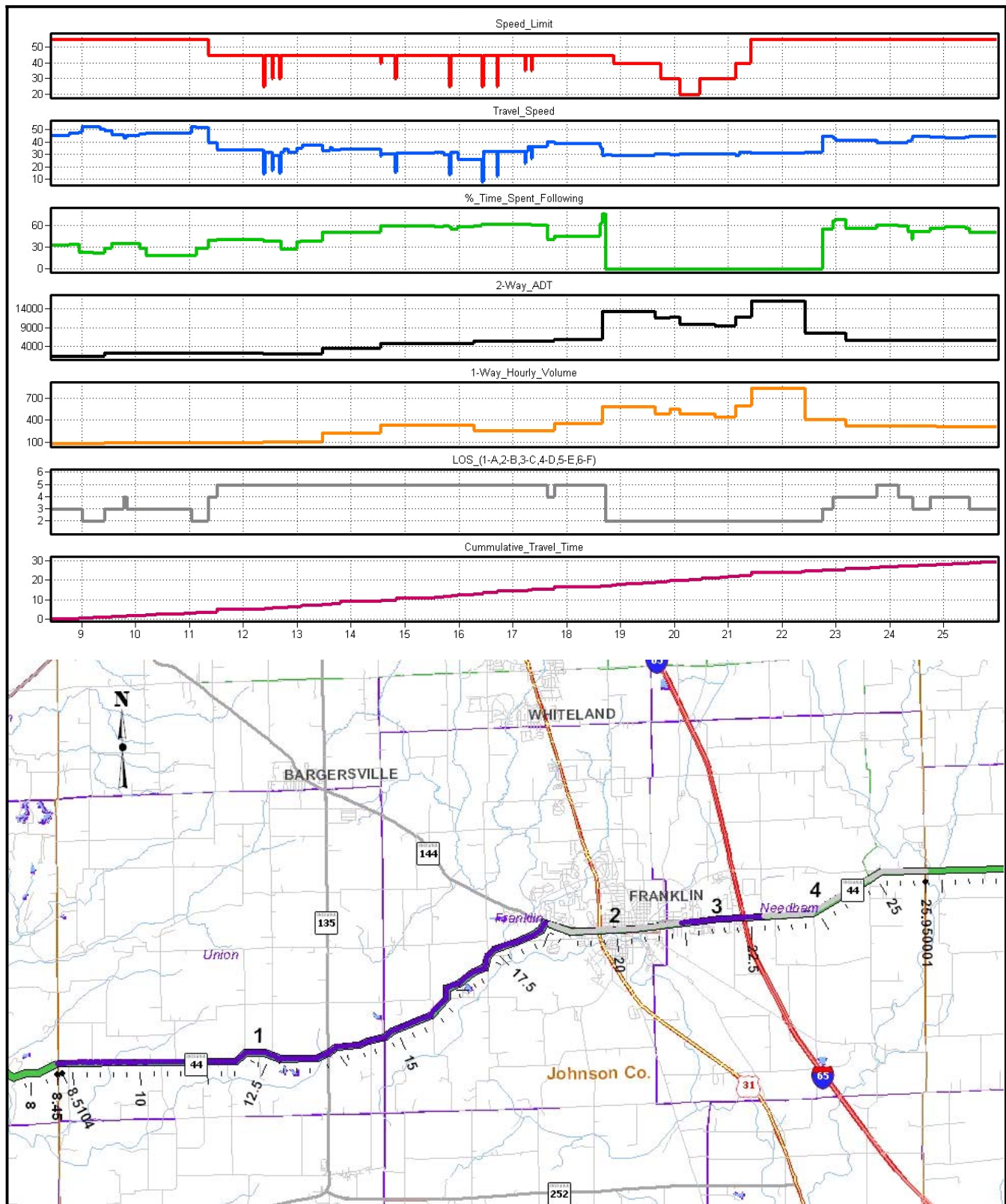


Figure 5-7: Traffic Operations - SR 44, Johnson County



State Route 44 – Shelby County

Except where it passes through the City of Shelbyville, SR 44 is entirely rural within Shelby County. It is a two-lane highway except for a four-lane section between Shelbyville and I-74, and where auxiliary lanes are provided for turning movements within Shelbyville. SR 44 is classified as rural in Shelby County except where it passes through Shelbyville. There is little congestion on the rural sections of SR 44 in Shelby County although levels of service are reduced at some locations by the geometrics of the roadway.

For purposes of review, SR 44 within Shelby County has been divided into five segments based on functional classification and number of lanes. These sections are generally described as follows:

1. West county line to Shelbyville (9.1 miles): two-lane, rural
2. Edge of Shelbyville to SR 9 downtown (1.2 miles): two-lane, urban
3. SR 9 to I-74 (1.8 miles): four-lane, urban
4. I-74 interchange area (0.7 miles): four-lane, urban
5. I-74 to east county line (6.1 miles): two-lane, rural



SR 44 is on relatively straight alignment in Shelby County except near and within Shelbyville.

A summary of key traffic operational features for SR 44 within Shelby County is presented by segment in Table 5C.

Table 5C: Key Operational Features

SR 44 -- Shelby County	Segment					County Total
Data	1	2	3	4	5	
Length	9.1 mi	1.2 mi	1.8 mi	0.7 mi	6.1 mi	18.8 mi
Two-Way Ave Daily Traffic (ADT)	7,600	14,100	25,200	14,800	6,300	12,200
Ave One-Way Peak Hour Volume	390	560	1,040	690	360	550
Typical Speed Limit (mph)	50	35	35	55	55	45
Ave Operating Speed (mph)	40	25	25	45	45	40
Ave Traffic Signals per Mile	0	3.45	2.17	0	0	0.43
Ave No Passing Zones per Mile	0.26	1.00	1.00	1.00	0.17	0.38
Ave Access Points per Mile	13	26	26	44	46	38
Ave Peak Hour Level of Service	D - E	C - D	C	A - B	C - D	C - D
Accidents per million veh miles	0.91*	4.51**	4.51**	4.51**	NA	3.22***

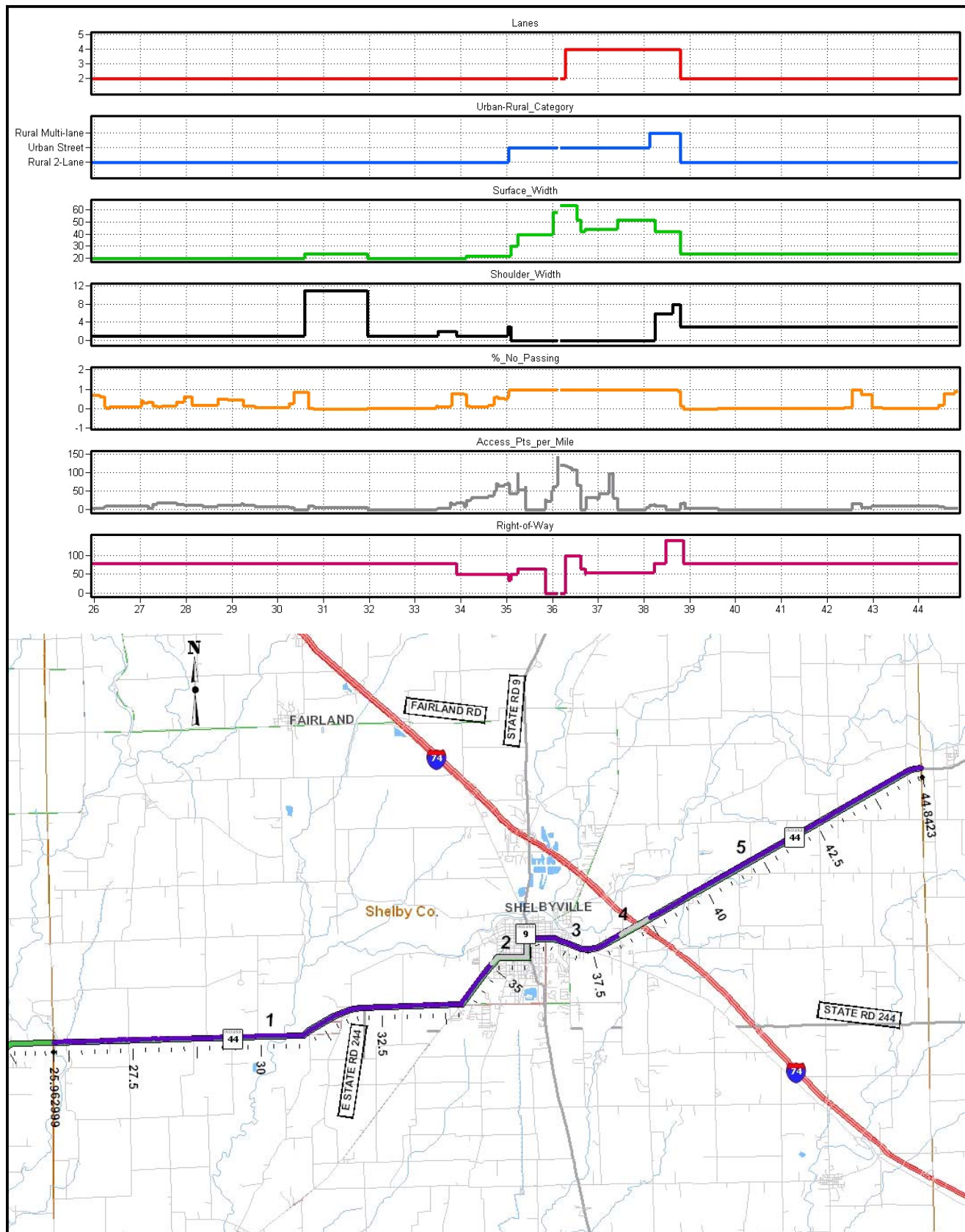
*Hendricks Twp

**Addison Twp

***Hendricks/Addison Twp

Physical features by mile point for SR 44 through Shelby County are described on Figure 5-8. SR 44 is a two-lane roadway over the full length except for the four-lane section between SR 9 in Shelbyville and I-74. Shoulder widths west of Shelbyville are generally only one to two feet, increasing to three to four feet east of I-74. SR 44 makes several turns on city streets within Shelbyville. The predominant physical conditions on rural sections are level terrain, with few horizontal curves.

Figure 5-8: Physical Features - SR 44, Shelby County



Approximately 62% of the roadway is available for passing within Shelby County. There is minimal access control on SR 44 in Shelby County, but there are still relatively few intersections and drives due to the undeveloped character of most of the corridor. Right of way is 60 to 70 feet wide on most sections

Data related to traffic operations on this section of SR 44 are illustrated by mile point on Figure 5-9. The posted speed limit is 55 mph outside Shelbyville. Daily traffic volumes are 6,000 to 7,000 vehicles per day (vpd) outside Shelbyville. Within Shelbyville, traffic volumes range between 14,000 vpd and 25,000 vpd. Reductions in travel speed occur primarily within the urbanized area of Shelbyville. Existing traffic operations exhibit an average 40 mph speed and most of the route operates at LOS D or E.



Traffic is slowed on SR 44 where it passes through downtown Shelbyville.

5.8 Strategies to Maximize System Efficiency – SR 44

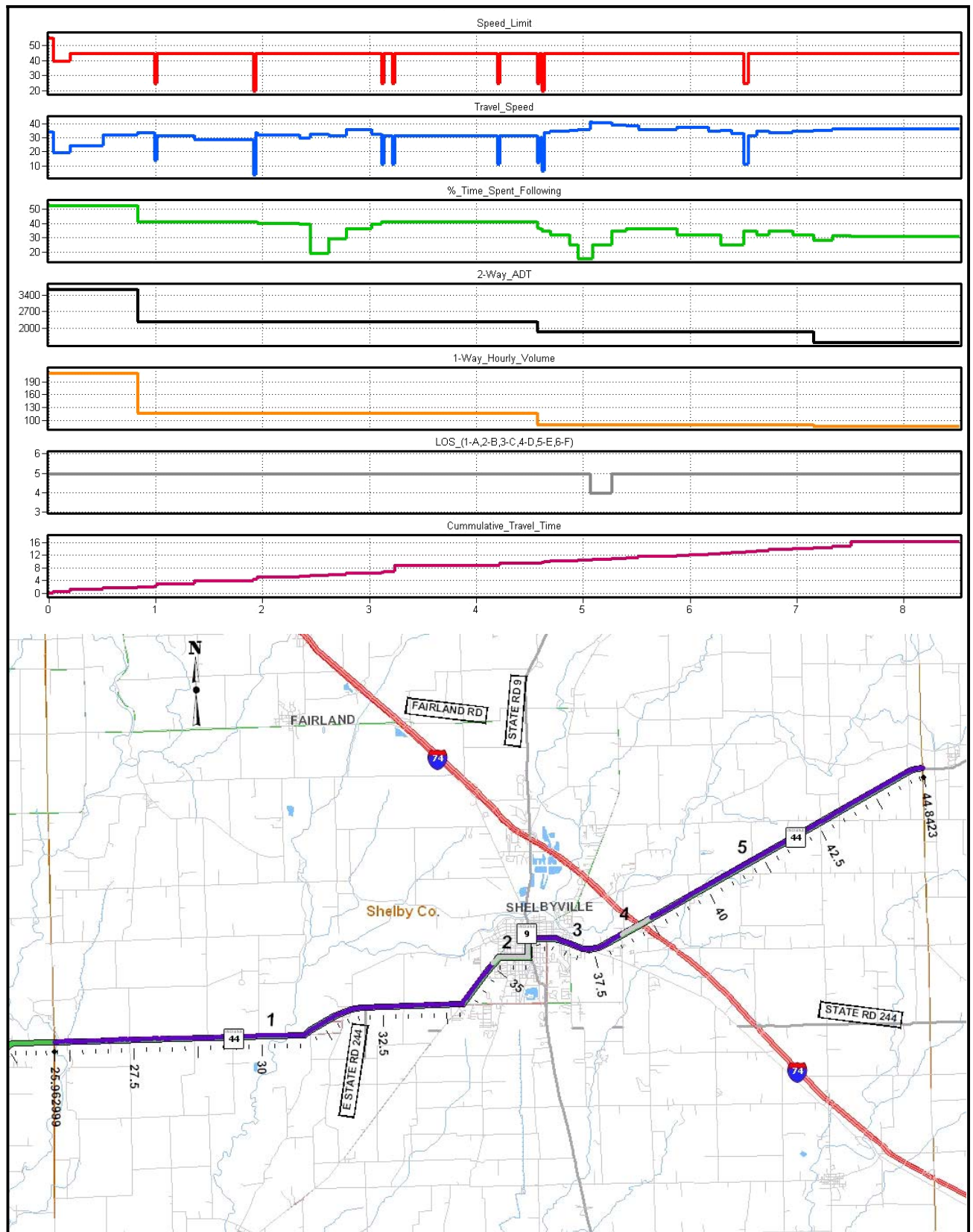
Both operationally and physically, SR 44 differs greatly in the eastern and western parts of the study corridor. Within and east of the City of Franklin, SR 44 is characterized by modest traffic demand and relatively good geometric characteristics, although traffic operations are compromised by the urban character of the roadway within Franklin and Shelbyville. To the west of Franklin, after SR 144 splits from SR 44 and extends northward on a different alignment, traffic volumes are quite low on SR 44, and geometric conditions (pavement width, horizontal and vertical alignment, and cross section) are very poor.

As described previously, INDOT is planning a facility upgrade for SR 44 east of Franklin, which should meet needs on that section for many years to come. No plans are currently in place to upgrade the western segments of SR 44, but given the low traffic volumes served, poor alignment and lack of right of way, a greater question might be whether any investment in this alignment is warranted as part of the state highway system.

Following is a review of potential actions to increase existing system efficiency to better serve current users of SR 44.

Access Management. The number of access points on SR 44 in the western portion of the study corridor ranges between 20 and 32 per mile. This places this section in the “high” category for access points, compromising both the safety and capacity of the roadway. This is consistent with the high accident rate (4 to 6 accidents per million vehicle miles) and poor level of service (D–E). As stated previously, however, there are many geometric problems in addition to the high number of access points. Correction of these deficiencies would require major reconstruction, with extensive sections of new alignment. That level of investment is not warranted by current demand, but if conditions change to warrant that investment, access management principles should be applied at every opportunity.

Figure 5-9: Traffic Operations - SR 44, Shelby County



Where SR 44 has four lanes, such as on the east side of Franklin, it might be beneficial to install a raised center median. This would improve safety, but would have little benefit for capacity since a median already exists there, with a center guard rail provided to prevent traffic from crossing the median area.

The number of access points on the eastern section of SR 44 is fewer (10 to 13 access points per mile except within Franklin and Shelbyville), and accident rates are much lower. Access management is currently not a major priority in these rural areas, and it would be difficult to achieve on the two-lane urban sections.

Traffic Engineering Improvements. The best opportunities to improve conditions through traffic engineering improvements exist within the urbanized areas of Shelbyville and Franklin. In Shelbyville, two intersections on the route are controlled by STOP signs. Future upgrades might provide traffic signals and at least one auxiliary lane for turning movements. These improvements should not be initiated, however, until one or more warrants of the Indiana Manual on Traffic Control Devices are met.

Traffic engineering opportunities in the Shelbyville central business district are limited due narrow right of way and the proximity of downtown buildings. On higher volume sections within Shelbyville, INDOT has already modernized traffic signals and installed turn lanes where reasonably feasible.

Opportunities for traffic engineering improvements in Franklin are also limited. On-street parking exists downtown except at the few locations where turn lanes have been provided. The existing corridor is constrained by the close proximity of buildings and sidewalks downtown, and by residential properties (some historic) and park land on either side of downtown. Although one-way operations have been considered in Franklin (using nearby King Street), the concept has had little support due to the historic residential character of the corridor.

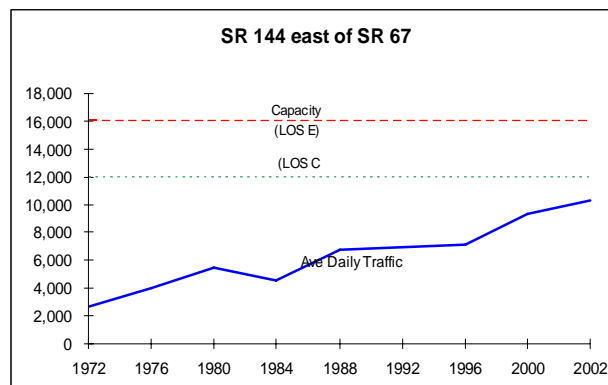
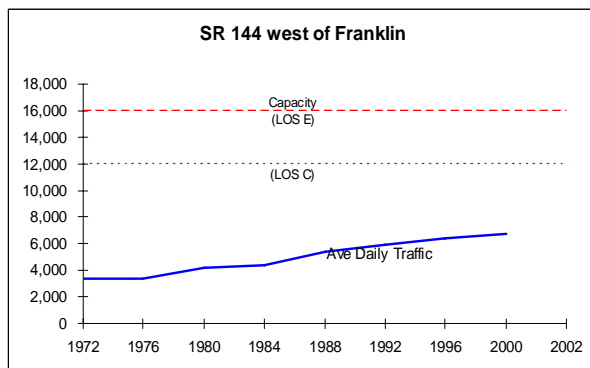
Traffic signal timing in both Franklin and Shelbyville should be reviewed on a periodic basis to ensure consistency with any changes in localized traffic demand.

Intelligent Transportation Systems (ITS). The high accident rate on the western portion of SR 44 might suggest improved incident detection and response systems, but that investment is not warranted by the low traffic demand on this section. The best opportunities for ITS applications are likely to occur at the approaches to interchanges with I-65 and I-74. Consideration should be given to providing motorist information at these locations with changeable message signs or by means of a broader approach such as highway advisory radio as part of an overall regional ITS strategy.

Transportation Demand Management (TDM). Although Franklin is developing an industrial and commercial area near I-65, there are generally no concentrations of employment in close proximity to SR 44 within the three counties of the South Corridor. Staggered work hours, ridesharing and flexible working hours may be beneficial in general for Franklin and Shelbyville, but current roadway service levels do not suggest this as a priority in terms of roadway operations on SR 44.

5.9 SR 144 Traffic Review

Average daily traffic volumes on SR 144 are highest on the western sections, between SR 67 and SR 37. These traffic volumes have grown steadily since the early 1970's, and the rate of growth has increased during the past ten years. This is due to the proximity of this section to Indianapolis and Marion County, and the high growth rate of population and employment in Johnson County.



The eastern portion of SR 144 between Bargersville and Franklin serves a lower volume of traffic, although growth has been steady over the years. This section currently serves 6,000 to 7,000 vehicles per day. Traffic count data is not available for the section of CR 144 between SR 37 and Bargersville, but volumes are likely to be similar. Overall, the available traffic data indicates that SR 144 is the primary east-west route serving the western half of the South Corridor study area.

5.10 Detailed Route Review – SR 144 (South Corridor)

SR 144 is classified as a rural major collector under INDOT's functional classification system between Mooresville and Franklin. The following sections review the existing physical features and factors related to traffic operations for State Route 144 in Morgan and Johnson Counties. Since the portion of roadway between SR 135 and SR 37 (identified as CR 144) is under county rather than state jurisdiction, physical and operational data are not available for that section.

State Route 144 – Morgan County

SR 144 is a two-lane rural highway through Morgan County, beginning at SR 67 on the east side of Mooresville and passing through the Town of Waverly near its intersection with SR 37. None of the roadway mileage is classified as urban. Although traffic volumes are not high on this section of roadway, the level of service is relatively poor due to limited shoulder width, hilly terrain, and a curvilinear alignment.

For review, SR 144 in Morgan County has been divided into three segments, as shown below:

1. SR 67 to Pennington Rd (1.7 miles): two-lane, rural
2. Pennington Rd to Old SR 144 (2.6 miles): two-lane, rural
3. Old SR 144 to east county line (3.3 miles): two-lane, rural



SR 144 begins at SR 67 in Mooresville.

A summary of key traffic operational features for SR 144 within Morgan County is presented by segment in Table 5D.

Table 5D: Key Operational Features

SR 144 -- Morgan County	Segment			County Total
Data	1	2	3	
Length	1.7 mi	2.6 mi	3.3 mi	7.6 mi
Two-Way Ave Daily Traffic (ADT)	18,800	10,600	11,500	15,100
Ave One-Way Peak Hour Volume	780 vph	530 vph	520 vph	650 vph
Typical Speed Limit	55 mph	45 mph	55 mph	55 mph
Ave Operating Speed	40 mph	25 mph	45 mph	35 mph
Ave Traffic Signals per Mile	1.79	0.00	0.00	0.40
Ave No Passing Zones per Mile	0.46	0.61	0.31	0.45
Ave Access Points per Mile	11	36	7	18
Ave Peak Hour Level of Service	D - E	E	D - E	D - E
Accidents per million vehicle miles	2.04*	1.50**	1.50**	1.74

* Brown Twp

** Madison Twp

Figure 5-10 presents the physical features by mile point for SR 144 through Morgan County. It is a two-lane rural roadway with four-foot shoulders on the western section and eight-foot shoulders on the eastern section. Geometrically, rural sections of the roadway are hilly with numerous curves, although speed reductions related to these geometric limitations are few and do not exceed ten mph at any location. Overall, approximately 55% of this roadway section is available for passing. There is minimal access control on SR 144, but the number of intersections and drives is limited by the terrain. Right-of-way varies along the route, from as little as 33 feet near the center of this section to 200 feet near SR 37.

Data related to traffic operations on this section of SR 144 are illustrated by mile point on Figure 5-11. The posted speed limit is 55 mph at most locations. Daily traffic volumes are approximately 17,000 vehicles per day (vpd) near Mooresville, dropping to 12,000 vpd or less for the rest of the route. Reductions in travel speed occur primarily at locations with passing restrictions on SR 144. Peak hour traffic operations exhibit an average speed of 35 mph, with LOS D – E over most of the route due to the geometric characteristics of the roadway.

State Route 144 – Johnson County

SR 144 in Johnson County begins at SR 135 in Bargersville, and terminates at SR 44 west of Franklin. As stated previously, SR 144 is discontinuous at this location, but this section of SR 144 is linked to SR 144 in Morgan County by County Road 144. In other words, a continuous roadway is provided between Franklin and Mooresville, but the section between SR 135 at Bargersville and SR 37 at Waverly is not designated as a state highway. Instead, it is a county road. CR 144 starts where SR 144 ends at SR 37, enters Johnson County from the northwest, and links with SR 144 again at SR 135 at Bargersville.



SR 144 intersects SR 135 in Bargersville.

Figure 5-10: Physical Features - SR 144, Morgan County

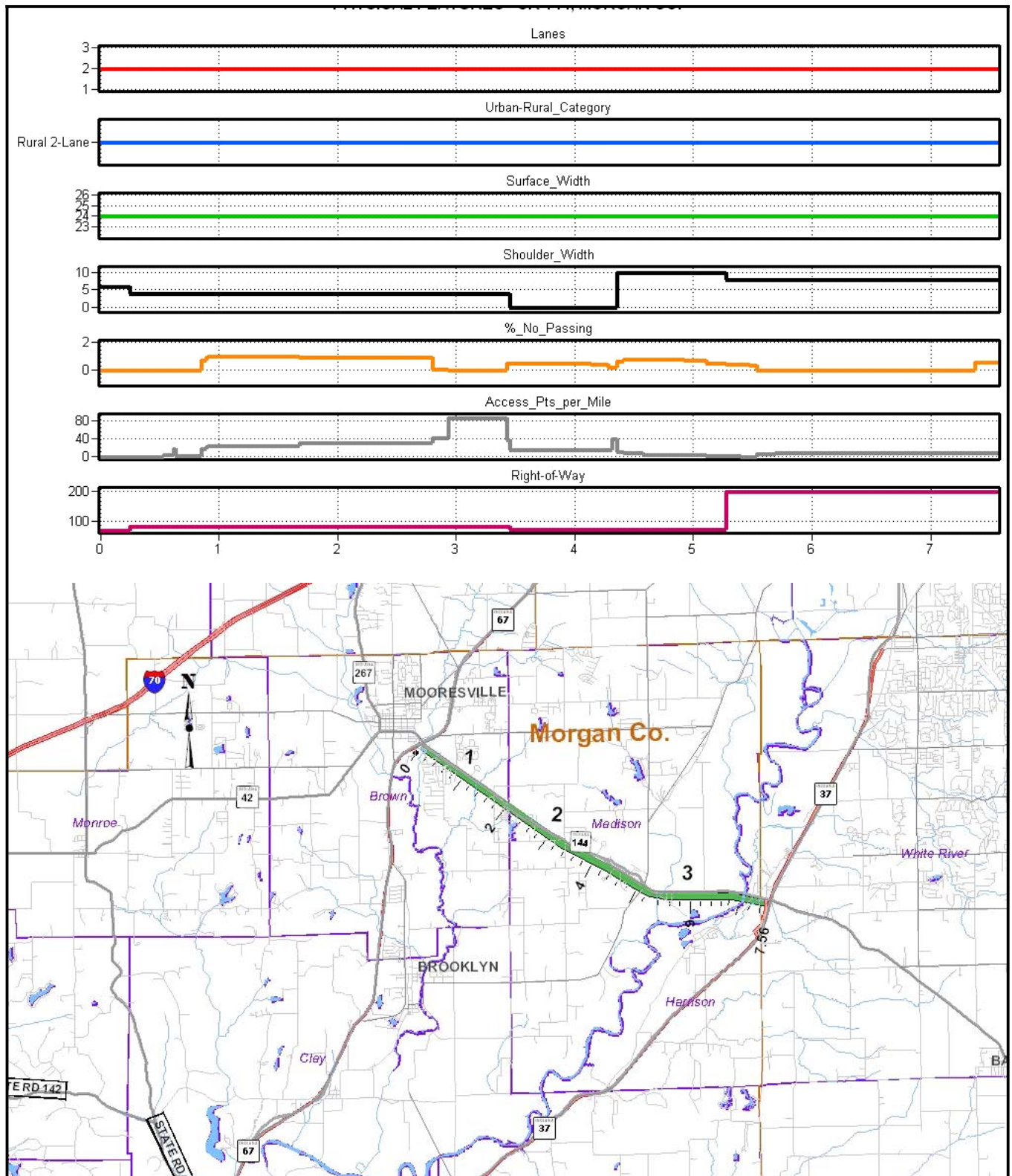
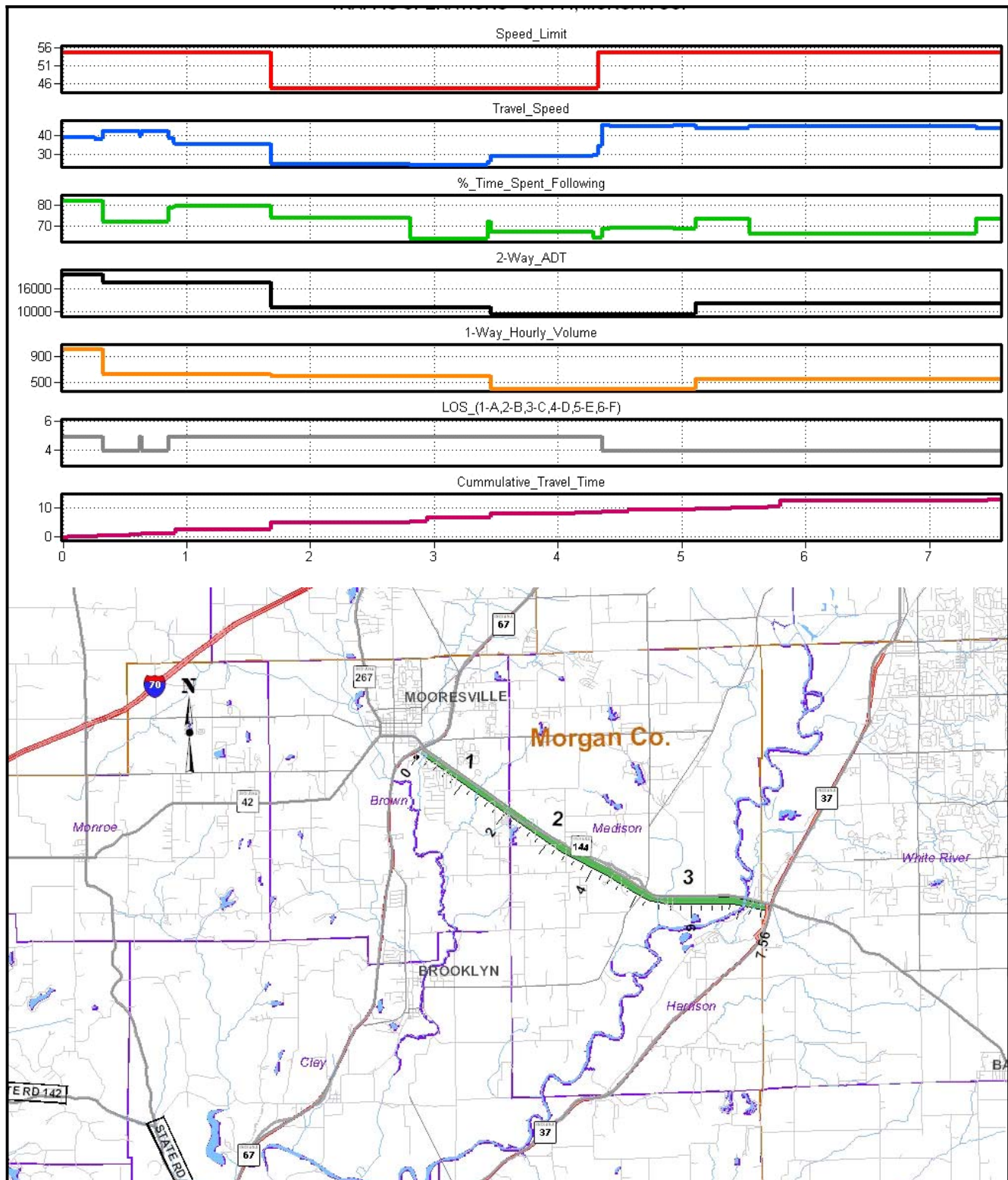


Figure 5-11: Traffic Operations - SR 144, Morgan County



Together, CR 144 and SR 144 provide a continuous two-lane rural highway in Johnson County. The route passes through farmland for the full route except within Bargserville and through the unincorporated areas of Mount Pleasant and Hopewell. The entire route of SR 144/CR 144 is classified as rural. There is little or no roadway congestion caused by high traffic demand. Generally, the level of service is a function of the terrain rather than excessive traffic volume.

For purposes of review, SR 144 within Johnson County has been divided into three segments, as shown on Figures 5-11 and 5-12. These sections are generally described as follows:

1. SR 135 to Hopewell (1.2 miles): two-lane, rural
2. Hopewell to Franklin (3.0 miles): two-lane, rural
3. Franklin to SR 44 (0.8 miles): two-lane, rural

A summary of key traffic operational features for SR 144 within Johnson County is presented by segment in Table 5E.

Table 5E: Key Operational Features

SR 144 -- Johnson County	Segment			County Total
Data	1	2	3	
Length	1.2 mi	3.0 mi	0.8 mi	5.0 mi
Two-Way Ave Daily Traffic (ADT)	5,700	11,200	11,600	9,700 vpd
Ave One-Way Peak Hour Volume	350 vph	520 vph	530 vph	470 vph
Typical Speed Limit	55 mph	55 mph	55 mph	55 mph
Ave Operating Speed	45 mph	40 mph	40 mph	40 mph
Ave Traffic Signals per Mile	0.00	0.00	0.00	0.00
Ave No Passing Zones per Mile	0.28	0.42	0.88	0.46
Ave Access Points per Mile	20	8	14	12
Ave Peak Hour Level of Service	C - D	D - E	D - E	D - E
Accidents per million vehicle miles	1.99*	0.95**	0.95**	1.10

*Union Twp

**Franklin Twp

Physical features by mile point for SR 144 through Johnson County are described on Figure 5-12. SR 144 is a two-lane rural roadway over its full length within Johnson County. Shoulder widths on rural sections are two feet or less at most locations. The roadway passes through a hilly area and has numerous curves.

Approximately 54% of the roadway is available for passing within Johnson County. There is minimal access control on SR 144, but the number of intersections and drives is limited by the terrain. Right-of-way is narrow (approximately 33 feet) for most of the route.

Data related to traffic operations on this section of SR 144 are illustrated by mile point on Figure 5-13. The posted speed limit is 55 mph. Daily traffic volumes are in the range of 11,000 to 12,000 vpd. Reductions in travel speed occur primarily where speed limits are reduced through Bargserville and where there are passing restrictions in the rural areas. Existing traffic operations exhibit an average 40 mph speed.

Since it is not a state highway, the same level of detailed information is not available for CR 144, which links SR 144 at SR 135 (Bargserville) with SR 144 at SR 37 (Waverly). Field reviews indicate this section of roadway is similar to SR 144 to the east. That is, it is located within relatively narrow

Figure 5-12: Physical Features - SR 144, Johnson County

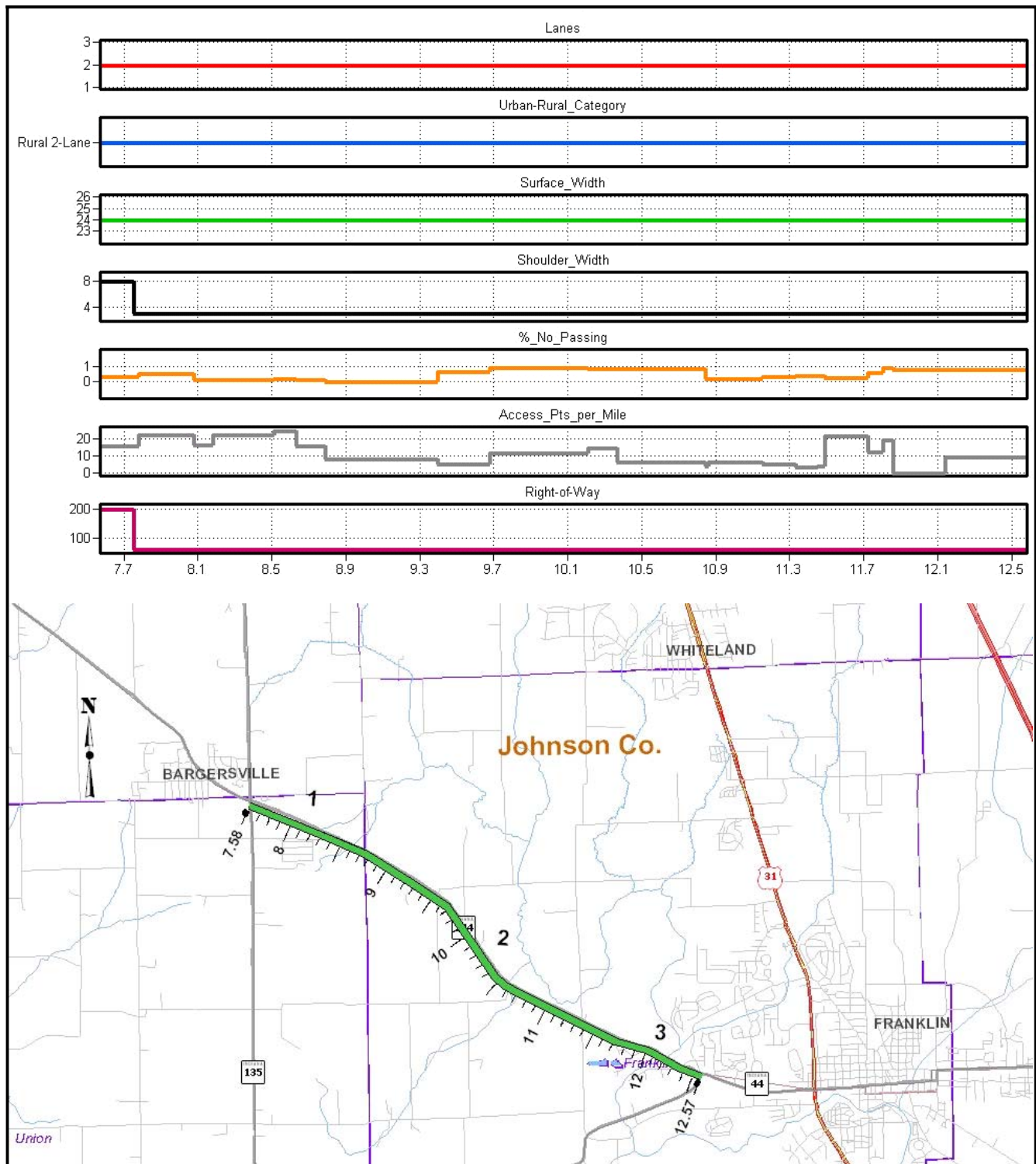
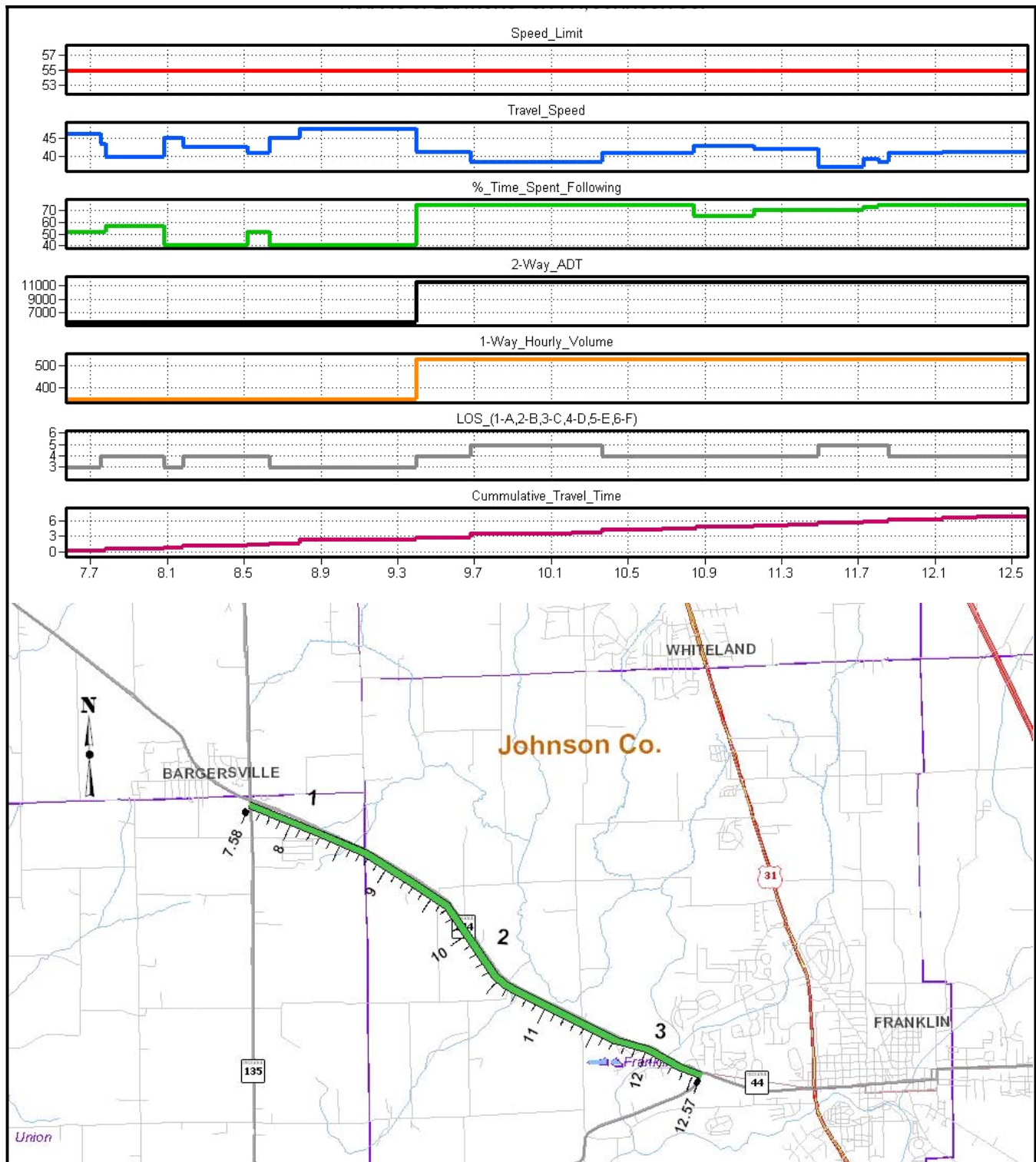


Figure 5-13: Traffic Operations - SR 144, Johnson County



right of way, passes through hilly terrain, and includes several curves that impact operational speeds on the roadway (generally, by no more than ten mph). At many locations, the center and edge line pavement markings are not visible. Vegetation is located close to the roadway edge. Shoulder areas are limited or nonexistent, and there are few passing blisters or turn lanes at cross roads and entrances. Traffic across an at-grade railroad crossing is currently controlled in both directions by a STOP sign, and four-way STOP control is in place where CR 144 crosses CR 500.

5.11 SR 42 Route Review (Morgan County)

As shown on Figure 5-1, SR 42 begins in Mooresville and serves as an “extension” of SR 144 toward Western Indiana (ultimately to Terre Haute). It is two lanes for its full length. The section between Mooresville and Monrovia effectively extends the Southern Corridor to SR 39 (West Corridor). Although traffic volumes are not high on this section, the level of service is relatively poor due to a lack of passing opportunities. An aerial view of this section is shown on Figure 5-14.

For review, SR 42 in Morgan County has been divided into three segments, as shown below:

1. West county line to SR 39 (16.9 miles): two-lane, rural
2. SR 39 (Monrovia) to Mooresville (6.1 miles): two-lane, rural
3. Town of Mooresville (0.9 miles): two-lane, urban

A summary of key traffic operational features for SR 42 within Morgan County is presented by segment in Table 5D.

Table 5F: Key Operational Features

SR 42 -- Morgan County	Segment			County Total
Data	1	2	3	
Length	16.9 mi	6.1 mi	0.9 mi	23.9 mi
Two-Way Ave Daily Traffic (ADT)	1,900	4,900	10,800	3,200
Ave One-Way Peak Hour Volume	130 vph	270 vph	540 vph	190 vph
Typical Speed Limit	50 mph	50 mph	35 mph	50 mph
Ave Operating Speed	40 mph	30 mph	30 mph	35 mph
Ave Traffic Signals per Mile	0.00	0.00	1.07	0.40
Ave No Passing Zones per Mile	0.51	0.76	0.89	0.59
Ave Access Points per Mile	9	19	53	13
Ave Peak Hour Level of Service	C - D	D - E	B - C	C - D

Figure 5-15 presents the physical features by mile point for SR 42 through Morgan County. It is a two-lane rural roadway with very narrow shoulders (one-foot or less) through virtually all of the county. Geometrically, rural sections of the roadway are hilly with curves few passing opportunities between Mooresville and Monrovia. There is minimal access control on SR 42, but the number of intersections and drives is limited by the terrain, except within Mooresville. Right-of-way is less than 40 feet except for a few areas where additional right of way has been acquired for bridge construction.

Data related to traffic operations on this section of SR 42 are illustrated by mile point on Figure 5-16. The posted speed limit is 50 mph between Mooresville and Monrovia and 55 mph at most other locations. Daily Traffic volumes on this segment of SR 42 are relatively high in Mooresville (approximately 10,000 vpd), but drop to about 2,000 vpd or less west of Monrovia. Speed reductions

FIGURE 5-14
SR 42, MOORESVILLE TO MONROVIA

See oversized figures file for Chapter 5

Figure 5-15: Physical Features - SR 42, Morgan County

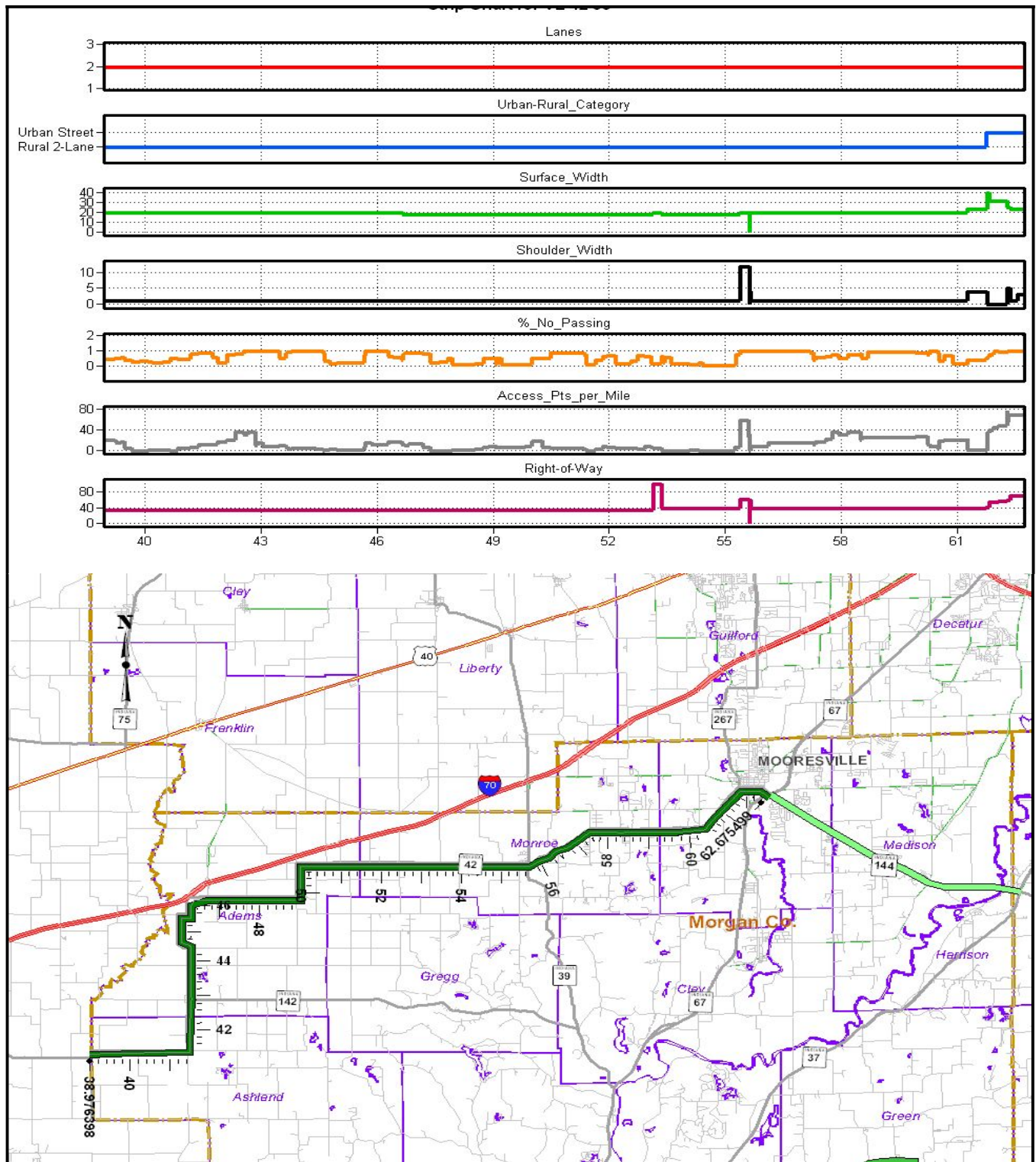
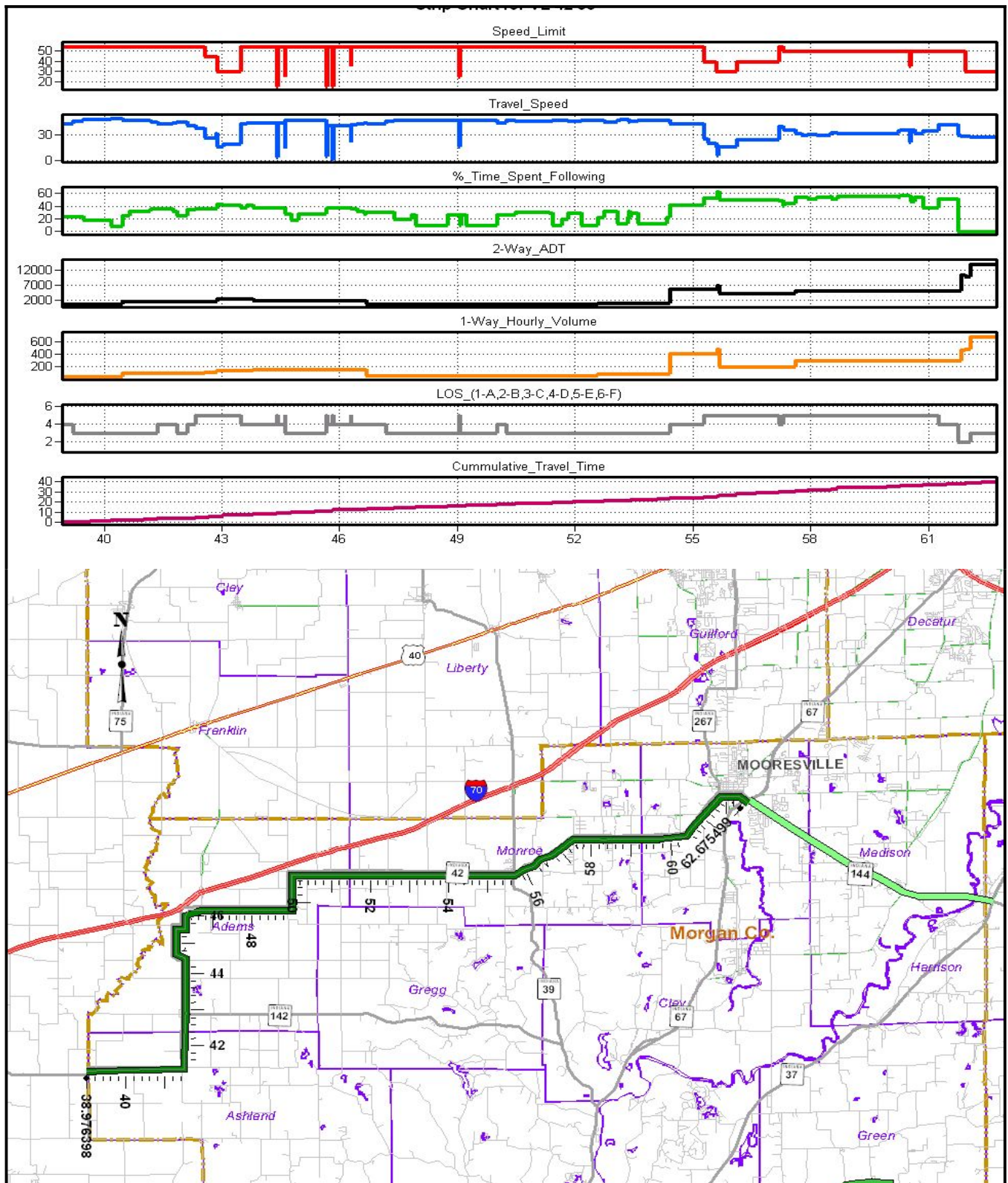


Figure 5-16: Traffic Operations - SR 42, Morgan County



occur primarily at locations with passing restrictions on SR 42. Peak hour traffic operations exhibit an average speed of 35 mph, with LOS D – E between Mooresville and Monrovia.

As reported previously, INDOT is planning a major pavement replacement project on SR 42 between Mooresville and Monrovia. Construction is scheduled to occur in 2008. When this work is complete, this section of SR 42 should be well suited for its role of serving local traffic movements and extending the SR 144 corridor west to meet future mobility needs in this area.

5.12 Strategies to Maximize System Efficiency (SR 144 and SR 42)

SR 144, in combination with SR 44 east of Franklin, CR 144 in Johnson County, and SR 42 in Morgan County is the primary east-west highway route serving Morgan, Johnson, and Shelby Counties. Traffic volumes on SR 144 are highest near Mooresville, then gradually decrease from west to east until the highway approaches Franklin. The existing two-lane roadway provides adequate capacity for the traffic volumes currently being served. Vertical and horizontal alignments are less than optimal at many locations as indicated by the percent no passing data, but advisory speeds for curves (where they exist) do not generally reduce speeds by more than ten mph. Narrow shoulder widths and limited right of way exist on much of the route, particularly in Johnson County.

Following is a review of potential actions to increase existing system efficiency to better serve current users of SR 144 and SR 42.

Access Management. The number of access points on SR 144 ranges between five and 40 per mile. Rural sections of SR 42 have nine to 19 access points per mile. Outside of urbanized fringe areas, most of the route has ten or fewer access points per mile, placing this section in the “low” category for access points. There are no four-lane sections, so raised medians are currently not a reasonable access management action. Overall, no access management actions are recommended for SR 144 or SR 42, although ordinary care should be taken to manage access for new developments near Mooresville, Franklin, and Bargersville.

Traffic Engineering Improvements. Most of the problems on SR 144 and SR 42 are related terrain and geometric design of the roadway rather than to high volume or traffic control limitations. It may be advisable over time to add auxiliary lanes for left turns at intersections with SR 44 and SR 135, and passing blisters and tapers should be located at any new developments located along the route. Otherwise, no specific traffic engineering improvements have been identified for SR 144.

The most significant improvement to the safety and capacity of the roadway would be achieved by improving shoulder widths and implementing spot geometric improvements at selected locations.

Intelligent Transportation Systems (ITS). The relatively low accident rate on SR 144 does not suggest that improved incident detection and response systems are needed, and in any case, that investment is not likely to be warranted for the volume served on this roadway.

The best opportunities for ITS applications relate to SR 144 and SR 42 as local “collectors” for radial routes oriented to Marion County. The motorist information component of the regional

ITS system would allow motorists to choose an alternate route while still on SR 144 if the information were informative and timely. This could occur with changeable message signs at interchanges with I-69 or SR 67, or by a broader approach such as highway advisory radio (HAR). Consideration should be given to these opportunities within an overall regional ITS strategy.

Transportation Demand Management (TDM). Staggered work hours, ridesharing and flexible working hours may be beneficial in Franklin and Mooresville, but current roadway service levels do not suggest this as a priority in terms of roadway operations on rural sections of SR 144 and SR 42.

5.13 Long Term Considerations for SR 44, SR 144 and SR 42

As with the other corridors under study, recommendations for meeting the future needs of the South Corridor will be based on forecasted traffic demand for the year 2025. These recommendations will be presented in the Final CISTMS Report. As stated in the Introduction, the purpose of this Base Conditions Report is to document existing conditions and make recommendations for short term improvements.

Although final corridor recommendations cannot be developed without traffic forecasts, some long-term observations can be made at this stage, based solely on the review of existing conditions. Those observations, referred to here as “long-term considerations,” are described below.

As stated previously, SR 144 (in combination with SR 42 and CR 144 through part of Johnson County) and SR 44 east of Franklin is currently the primary east-west highway route serving the South Corridor. This combined route should receive priority by INDOT due to its location, higher traffic demand and relatively good geometric condition. In order to provide continuity in operation and maintenance of this roadway, INDOT should also consider conversion of CR 144 to a state highway.

If CR 144 was converted to a state highway, it would be desirable to accomplish some upgrades in the near term. These upgrades would include the establishment of paved shoulders where possible, clearing the edge of roadway, placing new pavement markings, and adjusting traffic control at the railroad crossing and potentially at the existing four-way STOP location at CR 500W. These improvements should be further evaluated and refined in a detailed engineering corridor study.

In terms of long term needs, the SR 144/SR 44 route offers the best potential in these three counties for east-west capacity increases that may be needed in the future. The eastern half of this route is already a fairly good two-lane roadway and is slated for improvement by INDOT in the near future. In the west half of the corridor, SR 144/CR 144 is less well suited for future upgrade, but it is the best opportunity that currently exists. With some purchase of additional right of way, most portions of the alignment could be expanded on current alignment with environmental impacts that are likely to be acceptable.

Given the absence of parallel routes and the likelihood of continued growth in the counties served, care should be taken over the long term to preserve the SR 144/SR 44 corridor and to manage access and improve the roadway to meet changing needs. INDOT should protect and maintain this corridor, and

continue to coordinate with urban areas as they develop long term plans for meeting local needs associated with these routes.

The situation is different for SR 44 west of Bargersville, where rugged terrain, existing sharp curves and narrow right of way make it infeasible at many locations to use the existing alignment to provide added capacity. In terms of meeting long term needs, this section of SR 44 offers little opportunity. This conclusion, combined with the very low traffic volume currently being served, suggests that INDOT may wish to pursue actions to convert this from INDOT to county jurisdiction and focus on the needs of the SR 144/SR 44 corridor located further to the north.

All of these considerations will be taken into account when developing year 2025 corridor recommendations for inclusion in the Final CISTMS Report.